ABSTRACT

The invention relates to a process and a device for thermal measuring the flow rate (v) of a fluid (3). In conventional thermal sensors the heating power P is supplied in the form of rectangular pulses. According to the invention, the sensor means (1b) are supplied by a heating control (2b) with non-constant heating pulses having a sublinear build-up dynamics P(t). Thereby, a nonlinear behaviour of the threshold value time (t_S), until a threshold value temperature (T_m) is reached, as a function of the flow rate (v) can at least partially be compensated. Embodiments concern inter alia a build-up dynamics P(t) proportional to t^m and/or to a time-independent amplitude factor $(1+R_S/R_I)^{-1}$, wherein m is a Reynolds-number-dependent exponent and R_S, R_l are thermal transfer resistances. The advantages are an improved precision, a shorter measuring time and an enlarged measuring range for the flow rate v.

(Figure 1 and Figure 3a)